

SEQUENCE LISTING (PCT-JP2004-15997)
SEQUENCE LISTING

<110> KAZUSA DNA RESEARCH INSTITUTE FOUNDATION; Institute for Biomedical Research and Innovation

<120> Novel Plexin Polypeptide, DNA Encoding thereof and Their Use

<130> PCT-AB04047

<150> JP 2003-371040

<151> 2003-10-30

<150> JP 2004-229871

<151> 2004-08-05

<160> 19

<170> PatentIn version 3.1

<210> 1

<211> 1746

<212> PRT

<213> mouse

<400> 1

Ser Met Leu Asn Val Ala Ala Asn His Pro Asn Ala Ser Thr Val Gly
1 5 10 15

Leu Val Leu Pro Pro Thr Ser Gly Thr Gly Gly Ser Arg Leu Leu Val
20 25 30

Gly Ala Thr Tyr Thr Gly Phe Gly Ser Ala Phe Phe Pro Arg Asn Arg
35 40 45

Ser Leu Glu Asp His Arg Phe Glu Asn Thr Pro Glu Ile Ala Ile Arg
50 55 60

Ser Leu Asp Ala Arg Gly Asp Leu Ala Lys Leu Phe Thr Phe Asp Leu
65 70 75 80

Asn Pro Ser Asp Asp Asn Ile Leu Lys Ile Lys Gln Gly Ala Lys Glu
85 90 95

Gln His Lys Leu Gly Phe Val Arg Ala Phe Leu His Pro Ala Val Pro
100 105 110

Pro His Ser Ala Gln Pro Tyr Ala Tyr Leu Ala Leu Asn Ser Glu Ala
115 120 125

Arg Ala Gly Asp Lys Asp Ser Gln Ala Arg Ser Leu Leu Ala Arg Ile
130 135 140

Cys Leu Pro Arg Gly Ala Gly Gly Asp Ala Lys Lys Leu Thr Glu Ser
Page 1

145 150 155 160

Ala Asp Ala Tyr Cys Gly Trp Cys Thr Leu Glu Thr Arg Cys Thr Leu
385 390 395 400

SEQUENCE LISTING (PCT-JP2004-15997)

Gln Gln Asp Cys Thr Asn Ser Ser Gln Pro His Phe Trp Thr Ser Ala
405 410 415

Ser Glu Gly Pro Ser Arg Cys Pro Ala Met Thr Val Leu Pro Ser Glu
420 425 430

Ile Asp Val His Arg Asp Tyr Thr Gly Met Ile Leu Gln Ile Ser Gly
435 440 445

Ser Leu Pro Ser Leu Ser Gly Met Glu Met Ala Cys Asp Tyr Gly Asn
450 455 460

Gly Val Arg Thr Val Ala Arg Val Pro Gly Pro Ala Tyr Asp His Gln
465 470 475 480

Ile Ala Tyr Cys Asn Leu Leu Pro Arg Ala Gln Phe Pro Ser Phe Pro
485 490 495

Ala Gly Gln Asp His Val Thr Val Glu Met Ser Val Arg Val Lys Gly
500 505 510

His Asn Ile Val Ser Ala Asn Phe Thr Ile Tyr Asp Cys Ser Arg Ile
515 520 525

Gly Gln Val Tyr Pro His Thr Ala Cys Thr Ser Cys Leu Ser Thr Gln
530 535 540

Trp Pro Cys Ser Trp Cys Ile Gln Leu His Ser Cys Val Ser Asn Gln
545 550 555 560

Ser Gln Cys Gln Asp Ser Pro Asn Pro Thr Ser Pro Gln Asp Cys Pro
565 570 575

Gln Ile Leu Pro Ser Pro Leu Ala Pro Val Pro Thr Gly Gly Ser Gln
580 585 590

Asp Ile Leu Val Pro Leu Thr Lys Ala Thr Phe Phe His Gly Ser Ser
595 600 605

Leu Glu Cys Ser Phe Gly Leu Glu Glu Ser Phe Glu Ala Val Trp Ala
610 615 620

Asn Asn Ser Leu Val Arg Cys Asn Gln Val Val Leu His Thr Thr Gln
625 630 635 640

Lys Ser Gln Val Phe Pro Leu Ser Leu Lys Leu Lys Gly Pro Pro Asp
645 650 655

SEQUENCE LISTING (PCT-JP2004-15997)

Arg Phe Leu Asp Ser Pro Asn Pro Met Thr Val Val Val Tyr Asn Cys
660 665 670

Ala Met Gly Ser Pro Asp Cys Ser Gln Cys Leu Gly Arg Glu Asp Leu
675 680 685

Gly His Leu Cys Val Trp Asn Asp Gly Cys Arg Leu Arg Gly Pro Leu
690 695 700

Gln Pro Leu Pro Gly Thr Cys Pro Ala Pro Glu Ile Arg Ala Ile Glu
705 710 715 720

Pro Leu Ser Gly Pro Leu Asp Gly Gly Thr Leu Leu Thr Ile Arg Gly
725 730 735

Arg Asn Leu Gly Arg Arg Leu Ser Asp Val Ala His Gly Val Trp Ile
740 745 750

Gly Ser Val Ala Cys Glu Pro Leu Ala Asp Arg Tyr Thr Val Ser Glu
755 760 765

Glu Ile Val Cys Ala Thr Gly Pro Ala Ala Gly Ala Phe Ser Asp Val
770 775 780

Val Thr Val Asn Val Ser Lys Glu Gly Arg Ser Arg Glu Gln Phe Ser
785 790 795 800

Tyr Val Leu Pro Thr Val His Ser Leu Glu Pro Ser Met Gly Pro Lys
805 810 815

Ala Gly Gly Thr Arg Ile Thr Ile His Gly Ser Asp Leu Asn Val Gly
820 825 830

Ser Met Leu Gln Val Leu Val Asn Asp Thr Asp Pro Cys Thr Asp Leu
835 840 845

Thr Arg Thr Ala Thr Ser Ile Thr Cys Thr Val Pro Gly Gly Thr Leu
850 855 860

Pro Ser Pro Val Pro Val Cys Val Arg Phe Glu Ser Arg Gly Cys Val
865 870 875 880

His Gly Asn Leu Thr Phe Trp Tyr Met Gln Asn Pro Val Ile Thr Ala
885 890 895

Ile Ser Pro Gly Arg Ser Pro Val Ser Gly Gly Arg Thr Ile Thr Val
900 905 910

SEQUENCE LISTING (PCT-JP2004-15997)

Ala Gly Glu Arg Phe His Met Val Gln Asn Val Ser Met Ala Val His
915 920 925

His Ile Gly Arg Glu Pro Thr Phe Cys Lys Val Leu Asn Ser Thr Leu
930 935 940

Ile Thr Cys Pro Ser Pro Gly Ala Leu Ser Asn Ala Ser Ala Pro Val
945 950 955 960

Asp Phe Phe Ile Asn Gly Arg Ala Tyr Ala Asp Glu Ala Ala Glu Glu
965 970 975

Leu Leu Asp Pro Ala Glu Ala Gln Arg Gly Ser Arg Phe Arg Leu Asp
980 985 990

Tyr Leu Pro Asn Pro Gln Phe Ser Thr Ala Lys Arg Glu Lys Trp Ile
995 1000 1005

Lys His His Pro Gly Glu Pro Leu Thr Leu Val Ile His Lys Glu
1010 1015 1020

Gln Asp Ser Leu Gly Leu Glu Ser His Glu Tyr His Ile Lys Ile
1025 1030 1035

Gly Gln Val Ser Cys Asp Ile Gln Ile Ile Ser Asp Arg Val Ile
1040 1045 1050

His Cys Ser Val Asn Glu Ser Leu Gly Thr Ala Glu Gly Gln Leu
1055 1060 1065

Pro Ile Thr Ile Gln Val Gly Asn Phe Asn Gln Thr Ile Ala Thr
1070 1075 1080

Leu Gln Leu Gly Gly Ser Glu Thr Ala Ile Val Val Ser Ile Val
1085 1090 1095

Ile Cys Ser Val Leu Leu Leu Leu Ser Val Val Ala Leu Phe Val
1100 1105 1110

Phe Cys Thr Lys Ser Arg Arg Ala Glu Arg Tyr Trp Gln Lys Thr
1115 1120 1125

Leu Leu Gln Met Glu Glu Met Glu Ser Gln Ile Arg Glu Glu Ile
1130 1135 1140

Arg Lys Gly Phe Ala Glu Leu Gln Thr Asp Met Thr Asp Leu Thr

SEQUENCE LISTING (PCT-JP2004-15997)

1145													
						1150						1155	
Lys	Glu	Leu	Asn	Arg	Ser	Gln	Gly	Ile	Pro	Phe	Leu	Glu	Tyr
1160						1165					1170		Lys
His	Phe	Val	Thr	Arg	Thr	Phe	Phe	Pro	Lys	Cys	Ser	Ser	Leu
1175						1180					1185		Tyr
Glu	Glu	Arg	Tyr	Val	Leu	Pro	Ser	Lys	Thr	Leu	Asn	Ser	Gln
1190						1195					1200		Gly
Gly	Ser	Pro	Pro	Gln	Glu	Thr	His	Pro	Leu	Leu	Gly	Glu	Trp
1205						1210					1215		Asn
Ile	Pro	Glu	His	Cys	Arg	Pro	Ser	Met	Glu	Glu	Gly	Ile	Ser
1220						1225					1230		Leu
Phe	Ser	Ser	Leu	Leu	Asn	Asn	Lys	His	Phe	Leu	Ile	Val	Phe
1235						1240					1245		Val
His	Ala	Leu	Glu	Gln	Gln	Lys	Asp	Phe	Ala	Val	Arg	Asp	Arg
1250						1255					1260		Cys
Ser	Leu	Ala	Ser	Leu	Leu	Thr	Ile	Ala	Leu	His	Gly	Lys	Leu
1265						1270					1275		Glu
Tyr	Tyr	Thr	Ser	Ile	Met	Lys	Glu	Leu	Leu	Val	Asp	Leu	Ile
1280						1285					1290		Asp
Ala	Ser	Ala	Ala	Lys	Asn	Pro	Lys	Leu	Met	Leu	Arg	Arg	Thr
1295						1300					1305		Glu
Ser	Val	Val	Glu	Lys	Met	Leu	Thr	Asn	Trp	Met	Ser	Ile	Cys
1310						1315					1320		Met
Tyr	Gly	Cys	Leu	Arg	Glu	Thr	Val	Gly	Glu	Pro	Phe	Phe	Leu
1325						1330					1335		Leu
Leu	Cys	Ala	Ile	Lys	Gln	Gln	Ile	Asn	Lys	Gly	Ser	Ile	Asp
1340						1345					1350		Ala
Ile	Thr	Gly	Lys	Ala	Arg	Tyr	Thr	Leu	Asn	Glu	Glu	Trp	Leu
1355						1360					1365		Leu
Arg	Glu	Asn	Ile	Glu	Ala	Lys	Pro	Arg	Asn	Leu	Asn	Val	Ser
1370						1375					1380		Phe

SEQUENCE LISTING (PCT-JP2004-15997)

Gln Gly Cys Gly Met Asp Ser Leu Ser Val Arg Ala Met Asp Thr
1385 1390 1395

Asp Thr Leu Thr Gln Val Lys Glu Lys Ile Leu Glu Ala Phe Cys
1400 1405 1410

Lys Asn Val Pro Tyr Ser Gln Trp Pro Arg Ala Glu Asp Val Asp
1415 1420 1425

Leu Glu Trp Phe Ala Ser Ser Thr Gln Ser Tyr Val Leu Arg Asp
1430 1435 1440

Leu Asp Asp Thr Ser Val Val Glu Asp Gly Arg Lys Lys Leu Asn
1445 1450 1455

Thr Leu Ala His Tyr Lys Ile Pro Glu Gly Ala Ser Leu Ala Met
1460 1465 1470

Ser Leu Thr Asp Lys Lys Asp Ser Thr Leu Gly Arg Val Lys Asp
1475 1480 1485

Leu Asp Thr Glu Lys Tyr Phe His Leu Val Leu Pro Thr Asp Glu
1490 1495 1500

Leu Val Glu Pro Lys Lys Ser His Arg Gln Ser His Arg Lys Lys
1505 1510 1515

Val Leu Pro Glu Ile Tyr Leu Thr Arg Leu Leu Ser Thr Lys Gly
1520 1525 1530

Thr Leu Gln Lys Phe Leu Asp Asp Leu Phe Lys Ala Ile Leu Ser
1535 1540 1545

Ile Arg Glu Asp Lys Pro Pro Leu Ala Val Lys Tyr Phe Phe Asp
1550 1555 1560

Phe Leu Glu Glu Gln Ala Glu Lys Arg Gly Ile Ser Asp Pro Asp
1565 1570 1575

Thr Leu His Ile Trp Lys Thr Asn Ser Leu Pro Leu Arg Phe Trp
1580 1585 1590

Val Asn Ile Leu Lys Asn Pro Gln Phe Val Phe Asp Ile Glu Lys
1595 1600 1605

Thr Asp His Ile Asp Ala Cys Leu Ser Val Ile Ala Gln Ala Phe
1610 1615 1620

SEQUENCE LISTING (PCT-JP2004-15997)

Ile Asp Ala Cys Ser Ile Ser Asp Leu Gln Leu Gly Lys Asp Ser
 1625 1630 1635

Pro Thr Asn Lys Leu Leu Tyr Ala Lys Glu Ile Pro Glu Tyr Arg
 1640 1645 1650

Lys Thr Val Gln Arg Tyr Tyr Lys Gln Ile Gln Asp Met Thr Pro
 1655 1660 1665

Leu Ser Glu Gln Glu Met Asn Ala His Leu Ala Glu Glu Ser Arg
 1670 1675 1680

Lys Tyr Gln Asn Glu Phe Asn Thr Asn Val Ala Met Ala Glu Ile
 1685 1690 1695

Tyr Lys Tyr Ala Lys Arg Tyr Arg Pro Gln Ile Met Ala Ala Leu
 1700 1705 1710

Glu Ala Asn Pro Thr Ala Arg Arg Thr Gln Leu Gln His Lys Phe
 1715 1720 1725

Glu Gln Val Val Ala Leu Met Glu Asn Asn Ile Tyr Glu Cys Tyr
 1730 1735 1740

Ser Glu Ala
 1745

<210> 2
 <211> 6178
 <212> DNA
 <213> mouse

<400> 2
 ccagcatgct caacgtggcc gcccaaccacc ccaacgcgtc cactgtggga ctggtgctgc 60
 cgcctacctc gggcaccggg ggcagccgtc tgctcgtggg cgccacgtac accggcttcg 120
 gcagcgcttt cttcccgcgc aaccgtagcc tagaagacca ccgcttcgag aacacgcccg 180
 agatcgctat ccgctccctg gacgcgcgtg gagacttggc caagctcttc accttcgacc 240
 ttaaccctgc ggacgataac atcctgaaga tcaagcaggg cgccaaggag cagcacaagc 300
 tgggcttcgt gcgtgccttc ttgcacccgg cggtgccacc gcacagcgcg cagccctacg 360
 cgtacctggc gctcaacagc gaggcgcgtg cgggcgacaa ggacagccag gcgcgcagcc 420
 tgctggcgcg catctgcctg ccccgcgcg cggtggcgga cgccaagaag ctaccgagt 480
 cctacatcca actgggcttg cagtgcgcgg gcggcgcggg ccgcggcgac ctctacagcc 540
 gcctcgtgtc ggttttcccc gcgcgcgagc agttcttcgc cgtcttcgag cggccccagg 600

SEQUENCE LISTING (PCT-JP2004-15997)

gcgccccagg	tgcccgcgaac	gccccggccg	cgctttgcgc	cttccgcttc	gacgacgtgc	660
aggctgccat	tcgtgcagcg	cgcaccgcct	gcttcgtgga	gccggcgccc	gacgtggtgg	720
cgggtgttga	cagtgtggtg	cagggcaccg	ggccggcctg	cgagagcaag	cgcaacatac	780
agctgcagcc	ggagcaactg	gattgcggag	cggcccacct	gcagcaccca	ctgaccatcc	840
tgcagccgct	gagggcatcg	cccgtgttcc	gtgctccagg	gctcacggcc	gtggctgtgg	900
ccagtgccaa	caactacacg	gccgtctttc	tgggcaccgc	cacagggagg	ctcctcaaga	960
tcagcctgaa	cgagagcatg	caggtagtaa	gcaggcgagt	gctgactgta	gcctatgggg	1020
agcctgtgca	tcacgtcatg	cagtttgacc	ccatggatcc	tggttaccta	tacctgatga	1080
catcccacca	gatggcccga	gtgaagggtg	cagcgtgtga	ggtacactcc	acctgcgggg	1140
actgcgtggg	tgcgggcgat	gcctactgtg	gttgggtgcac	tctggagacc	cggtgcacac	1200
tccagcagga	ttgcaccaac	tccagccagc	cacatttctg	gaccagtgcc	agtgagggcc	1260
ccagccgctg	ccctgccatg	acagtactgc	cctcggagat	tgatgtgcac	cgggactaca	1320
caggtatgat	cttacagatc	tcaggaagcc	tgcccagcct	cagcggcatg	gagatggctt	1380
gtgactatgg	aaatggcggt	cgaacgggtg	cccgggtacc	tggccctgcc	tatgatcatc	1440
agattgccta	ctgcaatctc	ctgcccaggg	cccagtttcc	atcctttcct	gctggccagg	1500
accacgtgac	cgttgagatg	tctgtaaggg	tcaaaggaca	caacattgtc	tcagccaatt	1560
tcaccatcta	cgactgcagc	cgaattggac	aagtctaccc	ccatacagcc	tgtaccagct	1620
gcctgtccac	acagtggcct	tgctcctggg	gcatccagct	gcattcatgt	gtctccaacc	1680
agtctcagtg	ccaggactcg	ccaaacccca	cgagtcctca	ggactgtccc	cagatcctgc	1740
cctcgcccct	agcggccgtg	cccacagggtg	gctcccaaga	catcctgggtg	cccctgacta	1800
aagccacctt	cttccatggg	tcctccctcg	agtgcagctt	tgggctggaa	gagagctttg	1860
aggctgtatg	ggcgaataac	tactgggtcc	gctgcaacca	agtgggtgctg	cacacaaccc	1920
agaagagcca	ggtattttcca	ctgagtctga	agctgaaggg	gccgccagac	cgattcctag	1980
acagccctaa	ccccatgaca	gttggtgtct	acaactgtgc	tatgggcagc	cctgactgtt	2040
cccagtgcct	gggcccgtgag	gacctgggtc	acctctgtgt	ttggaatgat	ggctgtcgtc	2100
taagagggcc	cctgcagcca	ctccctggca	cctgcccagc	ccctgaaatc	cgagcgattg	2160
agcctctgag	tggccccttg	gacggtggga	ctttgtgtac	catccgtggc	aggaacttgg	2220
gccgtcggct	cagtgatgtg	gcacatgggtg	tgtggattgg	cagtgtggcc	tgtgaacccc	2280
tggctgacag	atacaccgtt	tcagaggaga	tcgtgtgtgc	cacagggcct	gccgcagggg	2340
ccttctcaga	cgtggtaacg	gtgaacgtct	ccaaggaagg	caggtctcgg	gaacagttct	2400
cctatgtgct	gcccacggtc	cactcactgg	agccttccat	gggccc aaag	gccgggggta	2460
caaggatcac	cattcacggc	agtgacctca	acgtgggctc	tatgctccag	gtcctgggtga	2520

SEQUENCE LISTING (PCT-JP2004-15997)

atgacacgga	cccctgcaca	gatcttacgc	gcacagccac	cagcatcacc	tgcactgtgc	2580
cagggggtac	cctgccctct	ccagtgcctg	tgtgtgtgcg	cttcgagagc	cggggctgcg	2640
tgcacggaaa	cctcaccttc	tggtacatgc	agaacccagt	catcacagcc	atcagcccag	2700
gccgcagccc	tgctcagtggc	ggcaggacca	tcactgtggc	tggcgaacgc	ttccacatgg	2760
tgcagaatgt	atcaatggct	gtacaccaca	ttggccggga	gcccacgttc	tgcaagggttc	2820
tcaactccac	actcatcacc	tgcccatctc	ctggagccct	gagcaatgct	tcggcgccctg	2880
tagacttctt	catcaatggc	cgggcatatg	cagacgaggc	agccgaggag	ctgctggacc	2940
ctgcagaggc	acagaggggc	agccggttcc	gcctagacta	cctccccaac	ccacagttct	3000
ccacagccaa	gagggagaag	tggatcaaac	atcacccagg	agagccgctc	accctcgtca	3060
tccataagga	gcaagacagc	ctggggctgg	agagccatga	gtaccacatc	aagattggcc	3120
aggtgtcctg	cgacatccag	atcatctcag	acagagtcac	ccactgctca	gtcaatgagt	3180
cgctgggcac	ggctgaagga	cagctgcca	tcacaatcca	ggtggggaac	ttcaaccaga	3240
ccatcgccac	actgcaactg	gggggcagcg	agacggccat	tgtggtgtcc	atcgatcatct	3300
gcagtgtcct	gttgctgctg	tctgtggttg	ctctgttcgt	cttctgcacc	aagagccgcc	3360
gtgccgagcg	ctactggcag	aagaccctgc	tgcagatgga	agagatggag	tctcagatcc	3420
gagaggagat	ccgtaaaggc	tttgcgagc	tgcagacaga	catgacggat	ctcaccaagg	3480
agctgaaccg	cagccagggc	atcccccttct	tggagtacaa	gcacttcgtg	actcgaacct	3540
tcttcccaaa	gtgctcttcc	ctctatgaag	agcggtatgt	gctgccctcg	aagaccctca	3600
actcccaggg	tggctccccg	ccacaggaaa	cccacccact	gctgggagag	tggaacatcc	3660
ctgaacactg	tcggcccagc	atggaggagg	ggatcagcct	gttctcctca	ctgctcaaca	3720
acaagcactt	cctcatcgtc	ttcgtccatg	ctctggagca	gcagaaggac	ttcgagtg	3780
gtgacaggtg	cagcctggcg	tccctgctga	ccatcgcgct	gcacggcaag	ctggagtact	3840
atacgagcat	catgaaggag	ctgctcgtgg	acctcatcga	cgcctcggcg	gccaagaacc	3900
ccaagctcat	gttgcggcgc	acggagtctg	tgggtggagaa	gatgcttacc	aactggatgt	3960
ccatctgcat	gtacggctgc	ctgagggaga	cagtaggtga	gccgttcttc	ctgctgttgt	4020
gtgccatcaa	gcagcagatc	aacaaaggct	ccatcgacgc	catcacaggc	aaagcccgt	4080
acacactcaa	cgaggagtgg	ctgctgaggg	agaacattga	ggccaagccc	cggaacttga	4140
acgtgtcctt	ccagggctgt	gggatggact	ccctcagcgt	gcgggccatg	gacaccgaca	4200
cgctgacgca	ggtgaaggag	aagatcctgg	aagccttctg	caagaacgtc	ccctactcac	4260
agtggccgcg	ggcggaggac	gtggaccttg	aatggtttgc	ctcgagtacc	cagagctacg	4320
tcctccggga	cctggatgac	acatcagtgg	tggaggacgg	ccgtaagaaa	ctgaacacac	4380

SEQUENCE LISTING (PCT-JP2004-15997)

tggcccacta	caagatacct	gagggcgcct	ccctagccat	gagcctcaca	gacaagaagg	4440
acagtaccct	gggcagagtg	aaagacttgg	acacagaaaa	gtatttccat	ttggtgctac	4500
ctacggatga	gctggtagag	cctaagaaat	ctcaccggca	gagccaccgc	aagaaagtat	4560
tgccagagat	ctacctgacc	cgcttgctgt	ccaccaaggg	cacgctgcag	aagttcctag	4620
atgacctgtt	caaggctatc	ctgagcatcc	gagaggacaa	gccccgctg	gctgtcaagt	4680
atttctttga	cttcctagag	gaacaggcgg	agaagagagg	catctccgac	cctgacaccc	4740
tgcatatctg	gaagaccaac	agccttcccc	tgcgcttctg	ggtgaacatc	ttaaaaaatc	4800
cccagtttgt	cttcgacata	gagaagacgg	accacatcga	cgctgcctg	tctgtcatcg	4860
cacaggcctt	catcgatgcc	tgctccatct	ctgacctgca	gctgggcaag	gactcaccca	4920
ccaacaagct	tctgtacgcg	aaggagatcc	ctgagtaccg	gaagaccgta	cagcgctatt	4980
ataaacagat	ccaagacatg	acgccgctca	gcgagcagga	aatgaacgca	cacctggccg	5040
aggagtctcg	gaaataccag	aatgagttca	acacaaacgt	ggccatggct	gagatttata	5100
aatatgctaa	gagggtatcga	ccacagatca	tggctgccct	ggaggccaac	cccacagccc	5160
gcaggaccca	gctacagcac	aagtttgaac	aggtggtggc	tctgatggaa	aacaatatct	5220
atgagtgtta	cagcgaggcc	tgatgcagaa	gagtgaccag	gagcttcggc	cagggagacg	5280
gcgtgcaggc	cacttggcct	ccacttgggt	tcttccccac	atctctcact	tgggctggga	5340
actgacagag	gagcctgctg	ggctaggagt	gggggacact	ggcctcttag	tgcccggctg	5400
ccgagctctt	ggccttgtcc	cctggggcat	ctctgtcccc	tccacctgcc	caagacccaa	5460
ctctaggatg	aaggccttga	atatcgatcg	ctgccagtcc	ctaataagac	tttccctgcc	5520
aaccaggaca	gcctggacca	tgctgcctg	ttcactgttt	caggctgctc	agcacacatt	5580
gggagaggtg	gccatatccc	agaacactac	ctcatccacc	tggcagaggg	aattttctgct	5640
tcagccacca	agcagttgtc	tgtgtccctc	atccagaggg	ggccttggcc	accaacagtt	5700
ccaaaccagg	tcagctgtta	gccgtctcat	tggccagtgg	cagcatgggc	agtgccatt	5760
gcccacagaa	cggtggagag	agggggacag	gctgggggtt	cctggcccca	ggaaagggag	5820
gaaggcgagg	atgcagggct	gtagctggac	tactcagtct	tcctggaagt	gtttctaaag	5880
agcaccactt	ttttttgttt	tttgtttttt	aagaaaaaaa	aaacttttat	atattaaaac	5940
aaaaacttat	gcaccaactg	tgaatagctg	ccgcttgctg	agatccccag	gggctcccgg	6000
tgacacactg	gaaatgactg	ttccagggga	cagaaaatac	tcatctgtcc	ccagcacagc	6060
ccccaccca	ccccccatag	ctgctgagac	tggctcacag	cccaaggggg	ctgggctgga	6120
ggggaaggct	gggactctct	ggaacattct	ttataataaa	agcctgccgg	gaaaacct	6178

<210> 3
<211> 20

SEQUENCE LISTING (PCT-JP2004-15997)

<212> DNA
 <213> Artificial

 <220>
 <223> Forward Primer

 <400> 3
 ccccggaact tgaacgtgtc 20

 <210> 4
 <211> 22
 <212> DNA
 <213> Artificial

 <220>
 <223> Reverse Primer

 <400> 4
 ccacctgttc aaacttgtgc tg 22

 <210> 5
 <211> 27
 <212> DNA
 <213> Artificial

 <220>
 <223> Reverse Primer (GSP1)

 <400> 5
 aatcttgatg tggactcat ggctctc 27

 <210> 6
 <211> 26
 <212> DNA
 <213> Artificial

 <220>
 <223> Forward Primer

 <400> 6
 aagctgctgg ggcggggaga tgggct 26

 <210> 7
 <211> 24
 <212> DNA
 <213> Artificial

 <220>
 <223> Reverse Primer (GSP2)

 <400> 7
 aatgttgtgt cctttgaccc ttac 24

 <210> 8
 <211> 80
 <212> DNA
 <213> Artificial

SEQUENCE LISTING (PCT-JP2004-15997)

<220>

<223> Forward Primer

<400> 8

ttgtcgacac aagtttgtac aaaaaagcag gctctatggg ctgtgggcgt ggtctccacg 60

gagccgcccc cgggctgagc 80

<210> 9

<211> 23

<212> DNA

<213> Artificial

<220>

<223> Reverse Primer

<400> 9

aaatgtggct ggctggagtt ggt 23

<210> 10

<211> 753

<212> DNA

<213> mouse

<400> 10

gagatgggct gtgggcgtgg tctccacgga gccgcccccg ggctgagcgc ctgccagag 60

tcggggccggg gcgccggggc cgggggcggc aggcgcgggc aggaagcgc tcgcggccccg 120

ggcccgcccc ccgcctctcg ccgcctccga gctcccggct cccggccgcg ccgcgccccca 180

tgcactcgcc gcgccgcgca gcccgcgctc gcctggatgg ctcgtcgcgc cgcgggcggc 240

gcaccccccta gcgccggggc cgccgcggcc gtcccccttg gtccgcgccc tactcgcgg 300

ggccctggtc tgctgccgct gcctctgctg ctgctgctg gggcggcacg ggccggcgcc 360

ctagagatcc agcgcggttt cccctcgccc acgcccacca acaacttcgc cctggacggc 420

acggcgggca ccgtgtactt ggcggcagtg aaccgcctgt accaactgtc gagtgcacaac 480

ttgagcctgg aagccgaggc gaccgtgggt cccgtgccgg acagcccgt gtgtcacgcc 540

ccgcagctcc cgcaggcctc gtgcgagcac ccgcggcgcc tcacggacaa ctacaacaaa 600

atcctgcagt tggacccggg ccagggtctg gtggctcgct gcggctccat ctaccagggt 660

ctgtgccagc tgaggcgccg gggcaacatc tcagccctgg ccgtgagctt tccgcctgcc 720

gcgccgaccg cagaaccggt caccgtgttc ccc 753

<210> 11

<211> 251

<212> PRT

<213> mouse

<400> 11

Glu Met Gly Cys Gly Arg Gly Leu His Gly Ala Ala Pro Gly Leu Ser
1 5 10 15

SEQUENCE LISTING (PCT-JP2004-15997)

Ala Ser Pro Glu Ser Gly Arg Gly Ala Gly Ala Gly Gly Arg Arg
20 25 30

Gly Gln Glu Ala Pro Arg Gly Pro Gly Pro Pro Pro Ala Ser Arg Arg
35 40 45

Leu Arg Ala Pro Gly Ser Arg Pro Arg Arg Ala Pro Cys Thr Arg Arg
50 55 60

Ala Ala Gln Pro Ala Leu Ala Trp Met Ala Arg Arg Ala Ala Gly Gly
65 70 75 80

Ala Pro Pro Ser Ala Arg Ala Ala Ala Ala Val Pro Leu Arg Pro Arg
85 90 95

Pro His Ser Arg Gly Pro Gly Leu Leu Pro Leu Pro Leu Leu Leu Leu
100 105 110

Leu Gly Ala Ala Arg Ala Gly Ala Leu Glu Ile Gln Arg Arg Phe Pro
115 120 125

Ser Pro Thr Pro Thr Asn Asn Phe Ala Leu Asp Gly Thr Ala Gly Thr
130 135 140

Val Tyr Leu Ala Ala Val Asn Arg Leu Tyr Gln Leu Ser Ser Ala Asn
145 150 155 160

Leu Ser Leu Glu Ala Glu Ala Thr Val Gly Pro Val Pro Asp Ser Pro
165 170 175

Leu Cys His Ala Pro Gln Leu Pro Gln Ala Ser Cys Glu His Pro Arg
180 185 190

Arg Leu Thr Asp Asn Tyr Asn Lys Ile Leu Gln Leu Asp Pro Gly Gln
195 200 205

Gly Leu Val Val Ala Cys Gly Ser Ile Tyr Gln Gly Leu Cys Gln Leu
210 215 220

Arg Arg Arg Gly Asn Ile Ser Ala Leu Ala Val Ser Phe Pro Pro Ala
225 230 235 240

Ala Pro Thr Ala Glu Pro Val Thr Val Phe Pro
245 250

<210> 12

SEQUENCE LISTING (PCT-JP2004-15997)

<211> 24
<212> DNA
<213> Artificial

<220>
<223> Forward Primer

<400> 12
caccatgggc tgtgggcgtg gtct 24

<210> 13
<211> 26
<212> DNA
<213> Artificial

<220>
<223> Reverse Primer 1

<400> 13
tcaggcctcg ctgtaacact cataga 26

<210> 14
<211> 23
<212> DNA
<213> Artificial

<220>
<223> Reverse Primer 2

<400> 14
ggcctcgctg taacactcat aga 23

<210> 15
<211> 1997
<212> PRT
<213> mouse

<400> 15

Glu Met Gly Cys Gly Arg Gly Leu His Gly Ala Ala Pro Gly Leu Ser
1 5 10 15

Ala Ser Pro Glu Ser Gly Arg Gly Ala Gly Ala Gly Gly Gly Arg Arg
20 25 30

Gly Gln Glu Ala Pro Arg Gly Pro Gly Pro Pro Ala Ser Arg Arg
35 40 45

Leu Arg Ala Pro Gly Ser Arg Pro Arg Arg Ala Pro Cys Thr Arg Arg
50 55 60

Ala Ala Gln Pro Ala Leu Ala Trp Met Ala Arg Arg Ala Ala Gly Gly
65 70 75 80

Ala Pro Pro Ser Ala Arg Ala Ala Ala Val Pro Leu Arg Pro Arg
Page 15

SEQUENCE LISTING (PCT-JP2004-15997)

85

90

95

Pro His Ser Arg Gly Pro Gly Leu Leu Pro Leu Pro Leu Leu Leu Leu
100 105 110

Leu Gly Ala Ala Arg Ala Gly Ala Leu Glu Ile Gln Arg Arg Phe Pro
115 120 125

Ser Pro Thr Pro Thr Asn Asn Phe Ala Leu Asp Gly Thr Ala Gly Thr
130 135 140

Val Tyr Leu Ala Ala Val Asn Arg Leu Tyr Gln Leu Ser Ser Ala Asn
145 150 155 160

Leu Ser Leu Glu Ala Glu Ala Thr Val Gly Pro Val Pro Asp Ser Pro
165 170 175

Leu Cys His Ala Pro Gln Leu Pro Gln Ala Ser Cys Glu His Pro Arg
180 185 190

Arg Leu Thr Asp Asn Tyr Asn Lys Ile Leu Gln Leu Asp Pro Gly Gln
195 200 205

Gly Leu Val Val Ala Cys Gly Ser Ile Tyr Gln Gly Leu Cys Gln Leu
210 215 220

Arg Arg Arg Gly Asn Ile Ser Ala Leu Ala Val Ser Phe Pro Pro Ala
225 230 235 240

Ala Pro Thr Ala Glu Pro Val Thr Val Phe Pro Ser Met Leu Asn Val
245 250 255

Ala Ala Asn His Pro Asn Ala Ser Thr Val Gly Leu Val Leu Pro Pro
260 265 270

Thr Ser Gly Thr Gly Gly Ser Arg Leu Leu Val Gly Ala Thr Tyr Thr
275 280 285

Gly Phe Gly Ser Ala Phe Phe Pro Arg Asn Arg Ser Leu Glu Asp His
290 295 300

Arg Phe Glu Asn Thr Pro Glu Ile Ala Ile Arg Ser Leu Asp Ala Arg
305 310 315 320

Gly Asp Leu Ala Lys Leu Phe Thr Phe Asp Leu Asn Pro Ser Asp Asp
325 330 335

SEQUENCE LISTING (PCT-JP2004-15997)

Asn Ile Leu Lys Ile Lys Gln Gly Ala Lys Glu Gln His Lys Leu Gly
340 345 350

Phe Val Arg Ala Phe Leu His Pro Ala Val Pro Pro His Ser Ala Gln
355 360 365

Pro Tyr Ala Tyr Leu Ala Leu Asn Ser Glu Ala Arg Ala Gly Asp Lys
370 375 380

Asp Ser Gln Ala Arg Ser Leu Leu Ala Arg Ile Cys Leu Pro Arg Gly
385 390 395 400

Ala Gly Gly Asp Ala Lys Lys Leu Thr Glu Ser Tyr Ile Gln Leu Gly
405 410 415

Leu Gln Cys Ala Gly Gly Ala Gly Arg Gly Asp Leu Tyr Ser Arg Leu
420 425 430

Val Ser Val Phe Pro Ala Arg Glu Gln Phe Phe Ala Val Phe Glu Arg
435 440 445

Pro Gln Gly Ala Pro Gly Ala Arg Asn Ala Pro Ala Ala Leu Cys Ala
450 455 460

Phe Arg Phe Asp Asp Val Gln Ala Ala Ile Arg Ala Ala Arg Thr Ala
465 470 475 480

Cys Phe Val Glu Pro Ala Pro Asp Val Val Ala Val Leu Asp Ser Val
485 490 495

Val Gln Gly Thr Gly Pro Ala Cys Glu Ser Lys Arg Asn Ile Gln Leu
500 505 510

Gln Pro Glu Gln Leu Asp Cys Gly Ala Ala His Leu Gln His Pro Leu
515 520 525

Thr Ile Leu Gln Pro Leu Arg Ala Ser Pro Val Phe Arg Ala Pro Gly
530 535 540

Leu Thr Ala Val Ala Val Ala Ser Ala Asn Asn Tyr Thr Ala Val Phe
545 550 555 560

Leu Gly Thr Ala Thr Gly Arg Leu Leu Lys Ile Ser Leu Asn Glu Ser
565 570 575

Met Gln Val Val Ser Arg Arg Val Leu Thr Val Ala Tyr Gly Glu Pro
580 585 590

SEQUENCE LISTING (PCT-JP2004-15997)

Val His His Val Met Gln Phe Asp Pro Met Asp Pro Gly Tyr Leu Tyr
595 600 605

Leu Met Thr Ser His Gln Met Ala Arg Val Lys Val Ala Ala Cys Glu
610 615 620

Val His Ser Thr Cys Gly Asp Cys Val Gly Ala Ala Asp Ala Tyr Cys
625 630 635 640

Gly Trp Cys Thr Leu Glu Thr Arg Cys Thr Leu Gln Gln Asp Cys Thr
645 650 655

Asn Ser Ser Gln Pro His Phe Trp Thr Ser Ala Ser Glu Gly Pro Ser
660 665 670

Arg Cys Pro Ala Met Thr Val Leu Pro Ser Glu Ile Asp Val His Arg
675 680 685

Asp Tyr Thr Gly Met Ile Leu Gln Ile Ser Gly Ser Leu Pro Ser Leu
690 695 700

Ser Gly Met Glu Met Ala Cys Asp Tyr Gly Asn Gly Val Arg Thr Val
705 710 715 720

Ala Arg Val Pro Gly Pro Ala Tyr Asp His Gln Ile Ala Tyr Cys Asn
725 730 735

Leu Leu Pro Arg Ala Gln Phe Pro Ser Phe Pro Ala Gly Gln Asp His
740 745 750

Val Thr Val Glu Met Ser Val Arg Val Lys Gly His Asn Ile Val Ser
755 760 765

Ala Asn Phe Thr Ile Tyr Asp Cys Ser Arg Ile Gly Gln Val Tyr Pro
770 775 780

His Thr Ala Cys Thr Ser Cys Leu Ser Thr Gln Trp Pro Cys Ser Trp
785 790 795 800

Cys Ile Gln Leu His Ser Cys Val Ser Asn Gln Ser Gln Cys Gln Asp
805 810 815

Ser Pro Asn Pro Thr Ser Pro Gln Asp Cys Pro Gln Ile Leu Pro Ser
820 825 830

Pro Leu Ala Pro Val Pro Thr Gly Gly Ser Gln Asp Ile Leu Val Pro
835 840 845

SEQUENCE LISTING (PCT-JP2004-15997)

Leu Thr Lys Ala Thr Phe Phe His Gly Ser Ser Leu Glu Cys Ser Phe
850 855 860

Gly Leu Glu Glu Ser Phe Glu Ala Val Trp Ala Asn Asn Ser Leu Val
865 870 875 880

Arg Cys Asn Gln Val Val Leu His Thr Thr Gln Lys Ser Gln Val Phe
885 890 895

Pro Leu Ser Leu Lys Leu Lys Gly Pro Pro Asp Arg Phe Leu Asp Ser
900 905 910

Pro Asn Pro Met Thr Val Val Val Tyr Asn Cys Ala Met Gly Ser Pro
915 920 925

Asp Cys Ser Gln Cys Leu Gly Arg Glu Asp Leu Gly His Leu Cys Val
930 935 940

Trp Asn Asp Gly Cys Arg Leu Arg Gly Pro Leu Gln Pro Leu Pro Gly
945 950 955 960

Thr Cys Pro Ala Pro Glu Ile Arg Ala Ile Glu Pro Leu Ser Gly Pro
965 970 975

Leu Asp Gly Gly Thr Leu Leu Thr Ile Arg Gly Arg Asn Leu Gly Arg
980 985 990

Arg Leu Ser Asp Val Ala His Gly Val Trp Ile Gly Ser Val Ala Cys
995 1000 1005

Glu Pro Leu Ala Asp Arg Tyr Thr Val Ser Glu Glu Ile Val Cys
1010 1015 1020

Ala Thr Gly Pro Ala Ala Gly Ala Phe Ser Asp Val Val Thr Val
1025 1030 1035

Asn Val Ser Lys Glu Gly Arg Ser Arg Glu Gln Phe Ser Tyr Val
1040 1045 1050

Leu Pro Thr Val His Ser Leu Glu Pro Ser Met Gly Pro Lys Ala
1055 1060 1065

Gly Gly Thr Arg Ile Thr Ile His Gly Ser Asp Leu Asn Val Gly
1070 1075 1080

Ser Met Leu Gln Val Leu Val Asn Asp Thr Asp Pro Cys Thr Asp
Page 19

SEQUENCE LISTING (PCT-JP2004-15997)

1085		1090		1095
Leu Thr	Arg Thr Ala Thr	Ser	Ile Thr Cys Thr	Val Pro Gly Gly
1100		1105		1110
Thr Leu	Pro Ser Pro Val	Pro	Val Cys Val Arg	Phe Glu Ser Arg
1115		1120		1125
Gly Cys	Val His Gly Asn	Leu	Thr Phe Trp Tyr	Met Gln Asn Pro
1130		1135		1140
Val Ile	Thr Ala Ile Ser	Pro	Gly Arg Ser Pro	Val Ser Gly Gly
1145		1150		1155
Arg Thr	Ile Thr Val Ala	Gly	Glu Arg Phe His	Met Val Gln Asn
1160		1165		1170
Val Ser	Met Ala Val His	His	Ile Gly Arg Glu	Pro Thr Phe Cys
1175		1180		1185
Lys Val	Leu Asn Ser Thr	Leu	Ile Thr Cys Pro	Ser Pro Gly Ala
1190		1195		1200
Leu Ser	Asn Ala Ser Ala	Pro	Val Asp Phe Phe	Ile Asn Gly Arg
1205		1210		1215
Ala Tyr	Ala Asp Glu Ala	Ala	Glu Glu Leu Leu	Asp Pro Ala Glu
1220		1225		1230
Ala Gln	Arg Gly Ser Arg	Phe	Arg Leu Asp Tyr	Leu Pro Asn Pro
1235		1240		1245
Gln Phe	Ser Thr Ala Lys	Arg	Glu Lys Trp Ile	Lys His His Pro
1250		1255		1260
Gly Glu	Pro Leu Thr Leu	Val	Ile His Lys Glu	Gln Asp Ser Leu
1265		1270		1275
Gly Leu	Glu Ser His Glu	Tyr	His Ile Lys Ile	Gly Gln Val Ser
1280		1285		1290
Cys Asp	Ile Gln Ile Ile	Ser	Asp Arg Val Ile	His Cys Ser Val
1295		1300		1305
Asn Glu	Ser Leu Gly Thr	Ala	Glu Gly Gln Leu	Pro Ile Thr Ile
1310		1315		1320

SEQUENCE LISTING (PCT-JP2004-15997)

Gln Val Gly Asn Phe Asn Gln Thr Ile Ala Thr Leu Gln Leu Gly
1325 1330 1335

Gly Ser Glu Thr Ala Ile Val Val Ser Ile Val Ile Cys Ser Val
1340 1345 1350

Leu Leu Leu Leu Ser Val Val Ala Leu Phe Val Phe Cys Thr Lys
1355 1360 1365

Ser Arg Arg Ala Glu Arg Tyr Trp Gln Lys Thr Leu Leu Gln Met
1370 1375 1380

Glu Glu Met Glu Ser Gln Ile Arg Glu Glu Ile Arg Lys Gly Phe
1385 1390 1395

Ala Glu Leu Gln Thr Asp Met Thr Asp Leu Thr Lys Glu Leu Asn
1400 1405 1410

Arg Ser Gln Gly Ile Pro Phe Leu Glu Tyr Lys His Phe Val Thr
1415 1420 1425

Arg Thr Phe Phe Pro Lys Cys Ser Ser Leu Tyr Glu Glu Arg Tyr
1430 1435 1440

Val Leu Pro Ser Lys Thr Leu Asn Ser Gln Gly Gly Ser Pro Pro
1445 1450 1455

Gln Glu Thr His Pro Leu Leu Gly Glu Trp Asn Ile Pro Glu His
1460 1465 1470

Cys Arg Pro Ser Met Glu Glu Gly Ile Ser Leu Phe Ser Ser Leu
1475 1480 1485

Leu Asn Asn Lys His Phe Leu Ile Val Phe Val His Ala Leu Glu
1490 1495 1500

Gln Gln Lys Asp Phe Ala Val Arg Asp Arg Cys Ser Leu Ala Ser
1505 1510 1515

Leu Leu Thr Ile Ala Leu His Gly Lys Leu Glu Tyr Tyr Thr Ser
1520 1525 1530

Ile Met Lys Glu Leu Leu Val Asp Leu Ile Asp Ala Ser Ala Ala
1535 1540 1545

Lys Asn Pro Lys Leu Met Leu Arg Arg Thr Glu Ser Val Val Glu
1550 1555 1560

SEQUENCE LISTING (PCT-JP2004-15997)

Lys Met 1565 Leu Thr Asn Trp Met 1570 Ser Ile Cys Met Tyr 1575 Gly Cys Leu
 Arg Glu 1580 Thr Val Gly Glu Pro 1585 Phe Phe Leu Leu Leu 1590 Cys Ala Ile
 Lys Gln 1595 Gln Ile Asn Lys Gly 1600 Ser Ile Asp Ala Ile 1605 Thr Gly Lys
 Ala Arg 1610 Tyr Thr Leu Asn Glu 1615 Glu Trp Leu Leu Arg 1620 Glu Asn Ile
 Glu Ala 1625 Lys Pro Arg Asn Leu 1630 Asn Val Ser Phe Gln 1635 Gly Cys Gly
 Met Asp 1640 Ser Leu Ser Val Arg 1645 Ala Met Asp Thr Asp 1650 Thr Leu Thr
 Gln Val 1655 Lys Glu Lys Ile Leu 1660 Glu Ala Phe Cys Lys 1665 Asn Val Pro
 Tyr Ser 1670 Gln Trp Pro Arg Ala 1675 Glu Asp Val Asp Leu 1680 Glu Trp Phe
 Ala Ser 1685 Ser Thr Gln Ser Tyr 1690 Val Leu Arg Asp Leu 1695 Asp Asp Thr
 Ser Val 1700 Val Glu Asp Gly Arg 1705 Lys Lys Leu Asn Thr 1710 Leu Ala His
 Tyr Lys 1715 Ile Pro Glu Gly Ala 1720 Ser Leu Ala Met Ser 1725 Leu Thr Asp
 Lys Lys 1730 Asp Ser Thr Leu Gly 1735 Arg Val Lys Asp Leu 1740 Asp Thr Glu
 Lys Tyr 1745 Phe His Leu Val Leu 1750 Pro Thr Asp Glu Leu 1755 Val Glu Pro
 Lys Lys 1760 Ser His Arg Gln Ser 1765 His Arg Lys Lys Val 1770 Leu Pro Glu
 Ile Tyr 1775 Leu Thr Arg Leu Leu 1780 Ser Thr Lys Gly Thr 1785 Leu Gln Lys
 Phe Leu 1790 Asp Asp Leu Phe Lys 1795 Ala Ile Leu Ser Ile 1800 Arg Glu Asp

SEQUENCE LISTING (PCT-JP2004-15997)

Lys Pro Pro Leu Ala Val Lys Tyr Phe Phe Asp Phe Leu Glu Glu
1805 1810 1815

Gln Ala Glu Lys Arg Gly Ile Ser Asp Pro Asp Thr Leu His Ile
1820 1825 1830

Trp Lys Thr Asn Ser Leu Pro Leu Arg Phe Trp Val Asn Ile Leu
1835 1840 1845

Lys Asn Pro Gln Phe Val Phe Asp Ile Glu Lys Thr Asp His Ile
1850 1855 1860

Asp Ala Cys Leu Ser Val Ile Ala Gln Ala Phe Ile Asp Ala Cys
1865 1870 1875

Ser Ile Ser Asp Leu Gln Leu Gly Lys Asp Ser Pro Thr Asn Lys
1880 1885 1890

Leu Leu Tyr Ala Lys Glu Ile Pro Glu Tyr Arg Lys Thr Val Gln
1895 1900 1905

Arg Tyr Tyr Lys Gln Ile Gln Asp Met Thr Pro Leu Ser Glu Gln
1910 1915 1920

Glu Met Asn Ala His Leu Ala Glu Glu Ser Arg Lys Tyr Gln Asn
1925 1930 1935

Glu Phe Asn Thr Asn Val Ala Met Ala Glu Ile Tyr Lys Tyr Ala
1940 1945 1950

Lys Arg Tyr Arg Pro Gln Ile Met Ala Ala Leu Glu Ala Asn Pro
1955 1960 1965

Thr Ala Arg Arg Thr Gln Leu Gln His Lys Phe Glu Gln Val Val
1970 1975 1980

Ala Leu Met Glu Asn Asn Ile Tyr Glu Cys Tyr Ser Glu Ala
1985 1990 1995

<210> 16
<211> 6931
<212> DNA
<213> mouse

<400> 16
gggagatggg ctgtgggcgt ggtctccacg gagccgcccc cgggctgagc gcctcgccag 60
agtcgggccc gggcgccggg gccgggggcg gcaggcgccg gcaggaagcg cctcgcggcc 120

SEQUENCE LISTING (PCT-JP2004-15997)

cgggcccgcc ccccgccctct cgccgcctcc gagctcccgg ctcccggccg cgccgcgccc	180
catgcaactcg ccgcgccgcg cagcccgcg cgcctggat ggctcgtcgc gccgcgggcg	240
gcgcaccccc tagcgcccg gccgcgcg ccgtccccctt gcgtccgcgc cctcaactcg	300
ggggccctgg tctgctgccg ctgcctctgc tgctgctgct cggggcgcca cgggcccggc	360
ccctagagat ccagcgccgt tccccctcgc ccacgcccac caacaacttc gccctggacg	420
gcacggcggg caccgtgtac ttggcggcag tgaaccgcct gtaccaactg tcgagtcca	480
acttgagcct ggaagccgag gcgaccgtgg gtcccgtgcc ggacagcccg ctgtgtcacg	540
ccccgcagct cccgcaggcc tcgtgcgagc acccgcggcg cctcacggac aactacaaca	600
aaatcctgca gttggaccgg ggccagggtc tgggtggtcgc gtgcggctcc atctaccagg	660
gtctgtgcca gctgaggcgc cggggcaaca tctcagccct ggccgtgagc tttccgcctg	720
ccgcgccgac cgcagaaccg gtcaccgtgt tccccagcat gctcaacgtg gccgccaacc	780
acccaacgc gtccactgtg ggactggtgc tgccgcctac ctcgggcacc gggggcagcc	840
gtctgctcgt gggcgccacg tacaccggct tcggcagcgc tttcttcccg cgcaaccgta	900
gcctagaaga ccaccgcttc gagaacacgc ccgagatcgc tatccgctcc ctggacgcgc	960
gtggagactt ggccaagctc ttcaccttcg accttaaccc gtcggacgat aacatcctga	1020
agatcaagca gggcgccaag gagcagcaca agctgggctt cgtgcgtgcc ttcttgacc	1080
cggcggtgcc accgcacagc gcgcagccct acgcgtacct ggcgctcaac agcgaggcgc	1140
gtgcgggcga caaggacagc caggcgcgca gcctgtggc gcgcactcgc ctgccccgcg	1200
gcgcgggtgg cgacgccaag aagctcaccg agtcctacat ccaactgggc ttgcagtgcg	1260
cgggcggcgc gggccgcggc gacctctaca gccgcctcgt gtcggttttc cccgcgcgcg	1320
agcagttctt cgccgtcttc gagcgcccc agggcgcccc aggtgcccgc aacgccccgg	1380
ccgcgctttg cgccttccgc ttcgacgacg tgcaggctgc cattcgtgca gcgcgcaccg	1440
cctgcttcgt ggagccggcg cccgacgtgg tggcggtgtt ggacagtgtg gtgcagggca	1500
ccgggccggc ctgcgagagc aagcgcaaca tacagctgca gccggagcaa ctggattgcg	1560
gagcgcccca cctgcagcac ccaactgacca tcctgcagcc gctgagggca tcgcccgtgt	1620
tccgtgctcc agggctcacg gccgtggctg tggccagtgc caacaactac acggccgtct	1680
ttctgggcac cgccacaggg aggtcctca agatcagcct gaacgagagc atgcaggtag	1740
taagcaggcg agtgctgact gtagcctatg gggagcctgt gcatcacgtc atgcagtttg	1800
accccatgga tcctgggttac ctatacctga tgacatccca ccagatggcc cgagtgaagg	1860
tggcagcgtg tgaggtacac tccacctgcg gggactgcgt gggtgcgcc gatgcctact	1920
gtggttggtg cactctggag acccggtgca cactccagca ggattgcacc aactccagcc	1980

SEQUENCE LISTING (PCT-JP2004-15997)

agccacattt ctggaccagt gccagtgagg gccccagccg ctgccctgcc atgacagtac	2040
tgccctcgga gattgatgtg caccgggact acacaggtat gatcttacag atctcaggaa	2100
gcctgcccag cctcagcggc atggagatgg cttgtgacta tggaaatggc gttcgaacgg	2160
tggcccgggt acctggccct gcctatgatc atcagattgc ctactgcaat ctctgcccc	2220
gggcccagtt tccatccttt cctgctggcc aggaccacgt gaccgttgag atgtctgtaa	2280
gggtcaaagg acacaacatt gtctcagcca atttcacat ctacgactgc agccgaattg	2340
gacaagtcta ccccataca gcctgtacca gctgcctgtc cacacagtgg ccttgctcct	2400
ggtgcatcca gctgcattca tgtgtctcca accagtctca gtgccaggac tcgccaaacc	2460
ccacgagtcc tcaggactgt ccccagatcc tgccctcgcc cctagcgccc gtgcccacag	2520
gtggctcca agacatcctg gtgcccctga ctaaagccac cttcttccat ggttcctccc	2580
tcgagtgcag ctttgggctg gaagagagct ttgaggctgt atgggcgaat aactcactgg	2640
tccgctgcaa ccaagtgggt ctgcacacaa cccagaagag ccaggatattt ccactgagtc	2700
tgaagctgaa ggggccgcca gaccgattcc tagacagccc taaccccatg acagttgtgg	2760
tctacaactg tgctatgggc agccctgact gttcccagtg cctgggccgt gaggacctgg	2820
gtcacctctg tgtttggaat gatggctgtc gtctaagagg gcccctgcag ccactccctg	2880
gcacctgccc agcccctgaa atccgagcga ttgagcctct gagtggcccc ttggacgggtg	2940
ggactttgct gaccatccgt ggcaggaact tgggccgtcg gctcagtgat gtggcacatg	3000
gtgtgtggat tggcagtggt gcctgtgaac ccctggctga cagatacacc gtttcagagg	3060
agatcgtgtg tgccacaggg cctgccgcag gggccttctc agacgtggta acggtgaacg	3120
tctccaagga aggaggtct cgggaacagt tctcctatgt gctgcccacg gtccactcac	3180
tggagccttc catgggcccc aaggccgggg gtacaaggat caccattcac ggcagtgacc	3240
tcaacgtggg ctctatgctc caggtcctgg tgaatgacac ggacccctgc acagatctta	3300
cgcgcacagc caccagcatc acctgcactg tgccaggggg taccctgccc tctccagtgc	3360
ctgtgtgtgt gcgcttcgag agccgggggt gcgtgcacgg aaacctcacc ttctggtaca	3420
tgcagaaccc agtcatcaca gccatcagcc caggccgcag ccctgtcagt ggcggcagga	3480
ccatcactgt ggctggcgaa cgcttcacaa tgggtgcagaa tgtatcaatg gctgtacacc	3540
acattggccg ggagcccacg ttctgcaagg ttctcaactc cacactcatc acctgccc	3600
ctcctggagc cctgagcaat gcttcggcgc ctgtagactt cttcatcaat ggccgggcat	3660
atgcagacga ggcagccgag gagctgctgg accctgcaga ggcacagagg ggcagccggt	3720
tccgcctaga ctacctcccc aaccacagc tctccacagc caagagggag aagtggatca	3780
aacatcacc caggagagccg ctcaccctcg tcatccataa ggagcaagac agcctggggc	3840
tggagagcca tgagtaccac atcaagattg gccagggtgtc ctgcgacatc cagatcatct	3900

SEQUENCE LISTING (PCT-JP2004-15997)

cagacagagt catccactgc tcagtcaatg agtcgctggg cacggctgaa ggacagctgc	3960
ccatcacaat ccaggtgggg aacttcaacc agaccatcgc cacactgcaa ctggggggca	4020
gcgagacggc catttggtg tccatcgtca tctgcagtgt cctgttgctg ctgtctgtgg	4080
ttgctctgtt cgtcttctgc accaagagcc gccgtgccga gcgctactgg cagaagaccc	4140
tgctgcagat ggaagagatg gagtctcaga tccgagagga gatccgtaaa ggctttgcgg	4200
agctgcagac agacatgacg gatctcacca aggagctgaa ccgcagccag ggcatccccct	4260
tcttgaggta caagcacttc gtgactcgaa ccttcttccc caagtgtctt tccctctatg	4320
aagagcggta tgtgctgccc tcgaagaccc tcaactccca gggtggtctc ccgccacagg	4380
aaaccacccc actgctggga gagtggaaca tccctgaaca ctgtcggccc agcatggagg	4440
aggggatcag cctgttctcc tcaactgctca acaacaagca cttcctcatc gtcttcgtcc	4500
atgctctgga gcagcagaag gacttcgcag tgcgtgacag gtgcagcctg gcgtccctgc	4560
tgaccatcgc gctgcacggc aagctggagt actatacgag catcatgaag gagctgctcg	4620
tggacctcat cgacgcctcg gcggccaaga accccaagct catgttgctg cgcacggagt	4680
ctgtggtgga gaagatgctt accaactgga tgtccatctg catgtacggc tgcctgaggg	4740
agacagtagg tgagccgttc ttcctgctgt tgtgtgccat caagcagcag atcaacaaag	4800
gctccatcga cgccatcaca ggcaaagccc gctacacact caacgaggag tggctgctga	4860
gggagaacat tgaggccaag ccccggaact tgaacgtgtc cttccagggc tgtgggatgg	4920
actccctcag cgtgcggggc atggacaccg acacgctgac gcagggtgaag gagaagatcc	4980
tggaagcctt ctgcaagaac gtcccctact cacagtggcc gcgggcggag gacgtggacc	5040
ttgaatggtt tgcctcgagt acccagagct acgtcctccg ggacctggat gacacatcag	5100
tggttgagga cggccgtaag aaactgaaca cactggccca ctacaagata cctgagggcg	5160
cctccctagc catgagcctc acagacaaga aggacagtac cctgggcaga gtgaaagact	5220
tggacacaga aaagtatttc catttggtgc tacctacgga tgagctggta gagcctaaga	5280
aatctcaccg gcagagccac cgcaagaaag tattgccaga gatctacctg acccgctgc	5340
tgtccaccaa gggcacgctg cagaagttcc tagatgacct gttcaaggct atcctgagca	5400
tccgagagga caagcccccg ctggctgtca agtatttctt tgacttccta gaggaacagg	5460
cggagaagag aggcattctc gaccctgaca ccctgcatat ctggaagacc aacagccttc	5520
ccctgcgctt ctgggtgaac atcttaaaaa atccccagtt tgtcttcgac atagagaaga	5580
cggaccacat cgacgcctgc ctgtctgtca tcgcacaggc cttcatcgat gcctgctcca	5640
tctctgacct gcagctgggc aaggactcac ccaccaacaa gcttctgtac gcgaaggaga	5700
tccctgagta ccggaagacc gtacagcgct attataaaca gatccaagac atgacgccgc	5760

SEQUENCE LISTING (PCT-JP2004-15997)

tcagcgagca ggaaatgaac gcacacctgg ccgaggagtc tcggaaatac cagaatgagt	5820
tcaacacaaa cgtggccatg gctgagatgt ataaatatgc taagaggatg cgaccacaga	5880
tcatggctgc cctggaggcc aacccccacag cccgcaggac ccagctacag cacaagtttg	5940
aacagggtgt ggctctgatg gaaaacaata tctatgagtg ttacagcgag gcctgatgca	6000
gaagagtgc caggagcttc ggccaggagg acggcgtgca ggccacttg cctccacttg	6060
gtttcttccc cacatctctc acttgggctg ggaactgaca gaggagcctg ctgggctagg	6120
agtgggggac actggcctct tagtgcccgg ctgccgagct cttggccttg tcccctgggg	6180
catctctgtc ccctccacct gcccaagacc caactctagg atgaaggcct tgaatatcga	6240
tcgctgccag tccctaataa gactttccct gcccaaccagg acagcctgga ccatgcctgc	6300
ctgttactg tttcaggctg ctccagcacac attgggagag gtggccatat ccagaaacac	6360
tacctcatcc acctggcaga gggaatttct gcttcagcca ccaagcagtt gtctgtgtcc	6420
ctcatccaga gggggccttg gccaccaaca gttccaaacc aggtcagctg ttagccgtct	6480
cattggccag tggcagcatg ggcagtggcc attgcccaca gaacgggtgga gagaggggga	6540
caggctgggg gttcctggcc ccaggaaagg gaggaaggcg aggatgcagg gctgtagctg	6600
gactactcag tcttcctgga agtggttcta aagagcacca cttttttttg ttttttgttt	6660
tttaagaaaa aaaaaacttt tatatatata aacaaaaact tatgcaccaa ctgtgaatag	6720
ctgccgcttg tgcagatccc caggggctcc cggtgacaca ctggaaatga ctgttccagg	6780
ggacagaaaa tactcatctg tccccagcac agccccccacc ccacccccca tagctgctga	6840
gactggctca cagcccaagg gggctgggct ggaggggaag gctgggactc tctggaacat	6900
tctttataat aaaagcctgc cgggaaaacc t	6931

<210> 17
 <211> 484
 <212> DNA
 <213> mouse genome

<400> 17	
tgacctcgga ccgcggggcg tggcccagag gcgtggccgg gggcgtggcc cggggcgaaa	60
gggcgtgggc caagctgctg gggcggggag atgggctgtg ggcgtggtct ccacggagcc	120
gccccggggc tgagcgctc gccagagtcg ggccggggcg ccggggccgg gggcggcagg	180
cgcgggcagg aagcgccctg cggccggggc ccgcccccg cctctcgccg cctccgagct	240
cccggctccc ggccgcgccg cgccccatgc actcgcccg ccgcgcagcc cgcgctcgcc	300
tggatggctc gtcgcgccg gggcggcgca ccccttagcg cccgggcccgc cgcggccgctc	360
cccttgctgc cgcgccctca ctgcggggc cctgggtctg tgccgctgcc tctgctgctg	420
ctgctcgggg cggcacgggc cggcgcccta aagatccagc gccgtttccc ctgcccacg	480

SEQUENCE LISTING (PCT-JP2004-15997)

484

ccca

<210> 18
 <211> 1337
 <212> PRT
 <213> mouse

<400> 18

Met Gly Cys Gly Arg Gly Leu His Gly Ala Ala Pro Gly Leu Ser Ala
 1 5 10 15

Ser Pro Glu Ser Gly Arg Gly Ala Gly Ala Gly Gly Gly Arg Arg Gly
 20 25 30

Gln Glu Ala Pro Arg Gly Pro Gly Pro Pro Pro Ala Ser Arg Arg Leu
 35 40 45

Arg Ala Pro Gly Ser Arg Pro Arg Arg Ala Pro Cys Thr Arg Arg Ala
 50 55 60

Ala Gln Pro Ala Leu Ala Trp Met Ala Arg Arg Ala Ala Gly Gly Ala
 65 70 75 80

Pro Pro Ser Ala Arg Ala Ala Ala Ala Val Pro Leu Arg Pro Arg Pro
 85 90 95

His Ser Arg Gly Pro Gly Leu Leu Pro Leu Pro Leu Leu Leu Leu Leu
 100 105 110

Gly Ala Ala Arg Ala Gly Ala Leu Glu Ile Gln Arg Arg Phe Pro Ser
 115 120 125

Pro Thr Pro Thr Asn Asn Phe Ala Leu Asp Gly Thr Ala Gly Thr Val
 130 135 140

Tyr Leu Ala Ala Val Asn Arg Leu Tyr Gln Leu Ser Ser Ala Asn Leu
 145 150 155 160

Ser Leu Glu Ala Glu Ala Thr Val Gly Pro Val Pro Asp Ser Pro Leu
 165 170 175

Cys His Ala Pro Gln Leu Pro Gln Ala Ser Cys Glu His Pro Arg Arg
 180 185 190

Leu Thr Asp Asn Tyr Asn Lys Ile Leu Gln Leu Asp Pro Gly Gln Gly
 195 200 205

Leu Val Val Ala Cys Gly Ser Ile Tyr Gln Gly Leu Cys Gln Leu Arg
 Page 28

SEQUENCE LISTING (PCT-JP2004-15997)

210

215

220

Arg Arg Gly Asn Ile Ser Ala Leu Ala Val Ser Phe Pro Pro Ala Ala
225 230 235 240

Pro Thr Ala Glu Pro Val Thr Val Phe Pro Ser Met Leu Asn Val Ala
245 250 255

Ala Asn His Pro Asn Ala Ser Thr Val Gly Leu Val Leu Pro Pro Thr
260 265 270

Ser Gly Thr Gly Gly Ser Arg Leu Leu Val Gly Ala Thr Tyr Thr Gly
275 280 285

Phe Gly Ser Ala Phe Phe Pro Arg Asn Arg Ser Leu Glu Asp His Arg
290 295 300

Phe Glu Asn Thr Pro Glu Ile Ala Ile Arg Ser Leu Asp Ala Arg Gly
305 310 315 320

Asp Leu Ala Lys Leu Phe Thr Phe Asp Leu Asn Pro Ser Asp Asp Asn
325 330 335

Ile Leu Lys Ile Lys Gln Gly Ala Lys Glu Gln His Lys Leu Gly Phe
340 345 350

Val Arg Ala Phe Leu His Pro Ala Val Pro Pro His Ser Ala Gln Pro
355 360 365

Tyr Ala Tyr Leu Ala Leu Asn Ser Glu Ala Arg Ala Gly Asp Lys Asp
370 375 380

Ser Gln Ala Arg Ser Leu Leu Ala Arg Ile Cys Leu Pro Arg Gly Ala
385 390 395 400

Gly Gly Asp Ala Lys Lys Leu Thr Glu Ser Tyr Ile Gln Leu Gly Leu
405 410 415

Gln Cys Ala Gly Gly Ala Gly Arg Gly Asp Leu Tyr Ser Arg Leu Val
420 425 430

Ser Val Phe Pro Ala Arg Glu Gln Phe Phe Ala Val Phe Glu Arg Pro
435 440 445

Gln Gly Ala Pro Gly Ala Arg Asn Ala Pro Ala Ala Leu Cys Ala Phe
450 455 460

SEQUENCE LISTING (PCT-JP2004-15997)

Arg Phe Asp Asp Val Gln Ala Ala Ile Arg Ala Ala Arg Thr Ala Cys
465 470 475 480

Phe Val Glu Pro Ala Pro Asp Val Val Ala Val Leu Asp Ser Val Val
485 490 495

Gln Gly Thr Gly Pro Ala Cys Glu Ser Lys Arg Asn Ile Gln Leu Gln
500 505 510

Pro Glu Gln Leu Asp Cys Gly Ala Ala His Leu Gln His Pro Leu Thr
515 520 525

Ile Leu Gln Pro Leu Arg Ala Ser Pro Val Phe Arg Ala Pro Gly Leu
530 535 540

Thr Ala Val Ala Val Ala Ser Ala Asn Asn Tyr Thr Ala Val Phe Leu
545 550 555 560

Gly Thr Ala Thr Gly Arg Leu Leu Lys Ile Ser Leu Asn Glu Ser Met
565 570 575

Gln Val Val Ser Arg Arg Val Leu Thr Val Ala Tyr Gly Glu Pro Val
580 585 590

His His Val Met Gln Phe Asp Pro Met Asp Pro Gly Tyr Leu Tyr Leu
595 600 605

Met Thr Ser His Gln Met Ala Arg Val Lys Val Ala Ala Cys Glu Val
610 615 620

His Ser Thr Cys Gly Asp Cys Val Gly Ala Ala Asp Ala Tyr Cys Gly
625 630 635 640

Trp Cys Thr Leu Glu Thr Arg Cys Thr Leu Gln Gln Asp Cys Thr Asn
645 650 655

Ser Ser Gln Pro His Phe Trp Thr Ser Ala Ser Glu Gly Pro Ser Arg
660 665 670

Cys Pro Ala Met Thr Val Leu Pro Ser Glu Ile Asp Val His Arg Asp
675 680 685

Tyr Thr Gly Met Ile Leu Gln Ile Ser Gly Ser Leu Pro Ser Leu Ser
690 695 700

Gly Met Glu Met Ala Cys Asp Tyr Gly Asn Gly Val Arg Thr Val Ala
705 710 715 720

SEQUENCE LISTING (PCT-JP2004-15997)

Arg Val Pro Gly Pro Ala Tyr Asp His Gln Ile Ala Tyr Cys Asn Leu
725 730 735

Leu Pro Arg Ala Gln Phe Pro Ser Phe Pro Ala Gly Gln Asp His Val
740 745 750

Thr Val Glu Met Ser Val Arg Val Lys Gly His Asn Ile Val Ser Ala
755 760 765

Asn Phe Thr Ile Tyr Asp Cys Ser Arg Ile Gly Gln Val Tyr Pro His
770 775 780

Thr Ala Cys Thr Ser Cys Leu Ser Thr Gln Trp Pro Cys Ser Trp Cys
785 790 795 800

Ile Gln Leu His Ser Cys Val Ser Asn Gln Ser Gln Cys Gln Asp Ser
805 810 815

Pro Asn Pro Thr Ser Pro Gln Asp Cys Pro Gln Ile Leu Pro Ser Pro
820 825 830

Leu Ala Pro Val Pro Thr Gly Gly Ser Gln Asp Ile Leu Val Pro Leu
835 840 845

Thr Lys Ala Thr Phe Phe His Gly Ser Ser Leu Glu Cys Ser Phe Gly
850 855 860

Leu Glu Glu Ser Phe Glu Ala Val Trp Ala Asn Asn Ser Leu Val Arg
865 870 875 880

Cys Asn Gln Val Val Leu His Thr Thr Gln Lys Ser Gln Val Phe Pro
885 890 895

Leu Ser Leu Lys Leu Lys Gly Pro Pro Asp Arg Phe Leu Asp Ser Pro
900 905 910

Asn Pro Met Thr Val Val Val Tyr Asn Cys Ala Met Gly Ser Pro Asp
915 920 925

Cys Ser Gln Cys Leu Gly Arg Glu Asp Leu Gly His Leu Cys Val Trp
930 935 940

Asn Asp Gly Cys Arg Leu Arg Gly Pro Leu Gln Pro Leu Pro Gly Thr
945 950 955 960

Cys Pro Ala Pro Glu Ile Arg Ala Ile Glu Pro Leu Ser Gly Pro Leu
965 970 975

SEQUENCE LISTING (PCT-JP2004-15997)

Asp Gly Gly Thr Leu Leu Thr Ile Arg Gly Arg Asn Leu Gly Arg Arg
980 985 990

Leu Ser Asp Val Ala His Gly Val Trp Ile Gly Ser Val Ala Cys Glu
995 1000 1005

Pro Leu Ala Asp Arg Tyr Thr Val Ser Glu Glu Ile Val Cys Ala
1010 1015 1020

Thr Gly Pro Ala Ala Gly Ala Phe Ser Asp Val Val Thr Val Asn
1025 1030 1035

Val Ser Lys Glu Gly Arg Ser Arg Glu Gln Phe Ser Tyr Val Leu
1040 1045 1050

Pro Thr Val His Ser Leu Glu Pro Ser Met Gly Pro Lys Ala Gly
1055 1060 1065

Gly Thr Arg Ile Thr Ile His Gly Ser Asp Leu Asn Val Gly Ser
1070 1075 1080

Met Leu Gln Val Leu Val Asn Asp Thr Asp Pro Cys Thr Asp Leu
1085 1090 1095

Thr Arg Thr Ala Thr Ser Ile Thr Cys Thr Val Pro Gly Gly Thr
1100 1105 1110

Leu Pro Ser Pro Val Pro Val Cys Val Arg Phe Glu Ser Arg Gly
1115 1120 1125

Cys Val His Gly Asn Leu Thr Phe Trp Tyr Met Gln Asn Pro Val
1130 1135 1140

Ile Thr Ala Ile Ser Pro Gly Arg Ser Pro Val Ser Gly Gly Arg
1145 1150 1155

Thr Ile Thr Val Ala Gly Glu Arg Phe His Met Val Gln Asn Val
1160 1165 1170

Ser Met Ala Val His His Ile Gly Arg Glu Pro Thr Phe Cys Lys
1175 1180 1185

Val Leu Asn Ser Thr Leu Ile Thr Cys Pro Ser Pro Gly Ala Leu
1190 1195 1200

Ser Asn Ala Ser Ala Pro Val Asp Phe Phe Ile Asn Gly Arg Ala

SEQUENCE LISTING (PCT-JP2004-15997)

1205

1210

1215

Tyr Ala Asp Glu Ala Ala Glu Glu Leu Leu Asp Pro Ala Glu Ala
1220 1225 1230

Gln Arg Gly Ser Arg Phe Arg Leu Asp Tyr Leu Pro Asn Pro Gln
1235 1240 1245

Phe Ser Thr Ala Lys Arg Glu Lys Trp Ile Lys His His Pro Gly
1250 1255 1260

Glu Pro Leu Thr Leu Val Ile His Lys Glu Gln Asp Ser Leu Gly
1265 1270 1275

Leu Glu Ser His Glu Tyr His Ile Lys Ile Gly Gln Val Ser Cys
1280 1285 1290

Asp Ile Gln Ile Ile Ser Asp Arg Val Ile His Cys Ser Val Asn
1295 1300 1305

Glu Ser Leu Gly Thr Ala Glu Gly Gln Leu Pro Ile Thr Ile Gln
1310 1315 1320

Val Gly Asn Phe Asn Gln Thr Ile Ala Thr Leu Gln Leu Gly
1325 1330 1335

<210> 19
<211> 4011
<212> DNA
<213> mouse

<400> 19
atgggctgtg ggcgtggtct ccacggagcc gccccgggc tgagcgctc gccagagtcg 60
ggccggggcg ccggggccgg gggcggcagg cgcgggcagg aagcgctcg cgggccgggc 120
ccgccccccg cctctcgccg cctccgagct cccggctccc ggccgcgccg cgccccatgc 180
actcgcccg cgcgcagcc cgcgctcgcc tggatggctc gtcgcgccg gggcggcgca 240
ccccctagcg cccggggccg cgcgccgctc cccttgctc cgcgccctca ctcgcggggc 300
cctggtctgc tgccgtgcc tctgctgctg ctgctcgggg cggcacgggc cggcgcccta 360
gagatccagc gccgtttccc ctcgcccacg cccaccaaca acttcgccct ggacggcacg 420
gcgggcaccg tgtacttggc ggcagtgaac cgctgtacc aactgtcgag tgccaacttg 480
agcctggaag ccgaggcgac cgtgggtccc gtgcccggaca gcccgctgtg tcacgccccg 540
cagctcccg aggcctcgtg cgagcaccg cggcgcccta cggacaacta caacaaaatc 600
ctgcagttgg acccgggcca gggcttggtg gtcgcgtgcg gctccatcta ccagggtctg 660

SEQUENCE LISTING (PCT-JP2004-15997)

tgccagctga	ggcgccgggg	caacatctca	gccctggccg	tgagctttcc	gcctgccgcg	720
ccgaccgcag	aaccggtcac	cgtgttcccc	agcatgctca	acgtggccgc	caaccacccc	780
aacgcgtcca	ctgtgggact	ggtgctgccg	cctacctcgg	gcaccggggg	cagccgtctg	840
ctcgtgggcg	ccacgtacac	cggcttcggc	agcgctttct	tcccgcgcaa	ccgtagccta	900
gaagaccacc	gcttcgagaa	cacgcccag	atcgctatcc	gctccctgga	cgcgcggtga	960
gacttggtcca	agctcttcac	cttcgacctt	aaccgcgtcg	acgataacat	cctgaagatc	1020
aagcagggcg	ccaaggagca	gcacaagctg	ggcttcgtgc	gtgccttctt	gcacccggcg	1080
gtgccaccgc	acagcgcgca	gccctacgcg	tacctggcgc	tcaacagcga	ggcgcggtgcg	1140
ggcgacaagg	acagccaggc	gcgcagcctg	ctggcgcgca	tctgcctgcc	ccgcggcgcg	1200
ggtggcgacg	ccaagaagct	caccgagtc	tacatccaac	tgggcttgca	gtgcgcgggc	1260
ggcgcgggcc	gcggcgacct	ctacagccgc	ctcgtgtcgg	ttttccccgc	gcgcgagcag	1320
ttcttcgccg	tcttcgagcg	gccccagggc	gccccagggtg	cccgaacgc	cccggccgcg	1380
ctttgcgcct	tccgcttcga	cgacgtgcag	gctgccattc	gtgcagcgcg	caccgcctgc	1440
ttcgtggagc	cggcgcccga	cgtggtggcg	gtgttgga	gtgtggtgca	gggcaccggg	1500
ccggcctgcg	agagcaagcg	caacatacag	ctgcagccgg	agcaactgga	ttgcggagcg	1560
gcccacctgc	agcaccact	gaccatcctg	cagccgctga	gggcatcgcc	cgtgttccgt	1620
gctccagggc	tcacggccgt	ggctgtggcc	agtgccaa	actacacggc	cgtctttctg	1680
ggcaccgcca	cagggaggct	cctcaagatc	agcctgaacg	agagcatgca	ggtagtaagc	1740
aggcgagtgc	tgactgtagc	ctatggggag	cctgtgcatc	acgtcatgca	gtttgacccc	1800
atggatcctg	gttacctata	cctgatgaca	tcccaccaga	tggcccgagt	gaagggtggca	1860
gcgtgtgagg	tacactccac	ctgcggggac	tgctgtgggtg	cggccgatgc	ctactgtggt	1920
tggtgcactc	tggagacccg	gtgcacactc	cagcaggatt	gcaccaactc	cagccagcca	1980
catttctgga	ccagtgccag	tgaggggccc	agccgctgcc	ctgccatgac	agtactgccc	2040
tcggagattg	atgtgcaccg	ggactacaca	ggtatgatct	tacagatctc	aggaagcctg	2100
cccagcctca	gcggcatgga	gatggcttgt	gactatggaa	atggcgttcg	aacgggtggcc	2160
cgggtacctg	gccctgccta	tgatcatcag	attgcctact	gcaatctcct	gcccagggcc	2220
cagtttccat	cctttcctgc	tggccaggac	cacgtgaccg	ttgagatgtc	tgtaagggtc	2280
aaaggacaca	acattgtctc	agccaatttc	accatctacg	actgcagccg	aattggacaa	2340
gtctaccccc	atacagcctg	taccagctgc	ctgtccacac	agtggccttg	ctcctggtgc	2400
atccagctgc	attcatgtgt	ctccaaccag	tctcagtgcc	aggactcgcc	aaacccacg	2460
agtcctcagg	actgtcccca	gatcctgccc	tcgcccctag	cgcccgtgcc	cacaggtggc	2520
tcccaagaca	tcctggtgcc	cctgactaaa	gccaccttct	tccatggttc	ctccctcgag	2580

SEQUENCE LISTING (PCT-JP2004-15997)

tgacgctttg ggctggaaga gagctttgag gctgtatggg cgaataactc actggtccgc	2640
tgcaaccaag tgggtgctgca cacaacccag aagagccagg tatttccact gagtctgaag	2700
ctgaaggggc cgccagaccg attcctagac agccctaacc ccatgacagt tgtggtctac	2760
aactgtgcta tgggcagccc tgactgttcc cagtgcctgg gccgtgagga cctgggtcac	2820
ctctgtgttt ggaatgatgg ctgtcgtcta agagggcccc tgcagccact ccctggcacc	2880
tgcccagccc ctgaaatccg agcgattgag cctctgagtg gccccttggg cgggtgggact	2940
ttgctgacca tccgtggcag gaacttgggc cgtcggctca gtgatgtggc acatggtgtg	3000
tggattggca gtgtggcctg tgaacccctg gctgacagat acaccgtttc agaggagatc	3060
gtgtgtgcca cagggcctgc cgcaggggcc ttctcagacg tggtaacggt gaacgtctcc	3120
aaggaaggca ggtctcggga acagtctctcc tatgtgctgc ccacggtcca ctactggag	3180
ccttccatgg gcccaaaggc cgggggtaca aggatcacca ttcacggcag tgacctcaac	3240
gtgggctcta tgctccaggt cctggtgaat gacacggacc cctgcacaga tcttacgcgc	3300
acagccacca gcatcacctg cactgtgcca gggggtagcc tgccctctcc agtgcctgtg	3360
tgtgtgctgct tcgagagccg gggctgctg cagggaaacc tcacctctg gtacatgcag	3420
aaccagtc tcaagccat cagcccaggc cgcagccctg tcagtggcgg caggaccatc	3480
actgtggctg gcgaacgctt ccacatggtg cagaatgtat caatggctgt acaccacatt	3540
ggccgggagc ccacgttctg caagggtctc aactccacac tcatcacctg cccatctcct	3600
ggagccctga gcaatgcttc ggcgcctgta gacttcttca tcaatggccg ggcatatgca	3660
gacgaggcag ccgaggagct gctggaccct gcagaggcac agaggggcag ccggttccgc	3720
ctagactacc tccccaaacc acagtctctc acagccaaga gggagaagtg gatcaaacat	3780
caccagag agccgctcac cctcgtcatc cataaggagc aagacagcct ggggctggag	3840
agccatgagt accacatcaa gattggccag gtgtcctgcg acatccagat catctcagac	3900
agagtcaccc actgctcagt caatgagtcg ctgggcacgg ctgaaggaca gctgcccac	3960
acaatccagg tggggaactt caaccagacc atcgccacac tgcaactggg g	4011